

# The Combat EDGE

October 1999



# The Combat EDGE

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**Air Combat Command's Mishap Prevention Magazine**

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 Denotes images digitally manipulated.

# ACCent on Safety

## SAFE FORCE 2000

Boy, I sure miss SrA \_\_\_\_\_. What a tragedy, Capt \_\_\_\_\_ didn't need to die. I wish \_\_\_\_\_ wouldn't have happened. You fill in the blanks.

Hi. I'm Col Greg "Vader" Alston, the new Chief of Safety for ACC. As I look forward to my tenure in this position, I'm both saddened and energized by the above blanks. I'm saddened because I know each of you can fill in those blanks; and in actuality, the mishaps you use for those blanks didn't need to happen. I'm energized to help the command not have names or topics to write in those spaces in Fiscal Year 2000—we don't have to accept these tragedies. You don't have to roll your car, or fall off your roof, or drown in the lake, or crash a jet. We all know how to not crash, how to not injure ourselves, and how to not die. Yet, I see disturbing numbers that show we don't take care of ourselves or our squadron mates.

Mishap prevention is not just for safety professionals. Risk management and mishap prevention are everyone's responsibility; they're a team effort.

I ask that you think "SAFE FORCE 2000" as we enter the new fiscal year. Safety is a force multiplier "safe" and "force" go together. The only thing missing is you, because only you can make it happen. In 2000, let's add your name to the safe force.

\_\_\_\_\_ 's SAFE FORCE 2000  
(Your name here)

**T**ake care of your buddies.  
**E**veryone is a safety officer.  
**A**wareness of environment.  
**M**anage risks.

## SAFETY



Col Greg "Vader" Alston  
ACC Chief of Safety





# IT'S YOU

*Col. Dave Williamson  
9th Air Force Chief of Safety  
Shaw AFB, S.C.*

**A**s I was getting in an early run here at sultry Shaw before it got too hot, I noticed a South Carolina State Trooper's cruiser parked in the gym parking lot. On the car was a sticker that read "HIGHWAYS or DIEWAYS... IT'S YOUR CHOICE." This bumper sticker got me thinking about mishaps in the Air Force and I realized that, for the vast majority of them, the responsible individual made a specific choice or decision that started a sequence, or at least perpetuated the sequence, of events that led to the mishap.

It is only the very rare case that someone is killed or injured just because they were at the wrong place at the wrong time (fate, if you will). Let me give you some examples.

We had a young airman vacationing on the West Coast and having a great time. He was

around, but things went tragically wrong when it became obvious that he was in trouble and drowned. It was *his decision* to jump into the lake.

An example from the flying world, an F-16 pilot was out on a Basic Fighter Maneuver (BFM) mission and realized his G-suit and Pressure Breathing for Gravity (PBG) system were not working properly. He then *decided* to continue the sortie and limit his maneuvering to five Gs. Unfortunately for him, in the heat of battle he exceeded this limit and, because his equipment was not working properly, he over G'ed his body, blacked out and luckily regained consciousness just in time to eject. Unfortunately, he was out of the ejection envelope and sustained massive leg injuries. Again, it was *his decision* to continue the mishap sequence once it started.

My point is that in most cases we *decide* what we're going to do; we *consciously make a choice*.

We decide to drink and then drive, we decide to keep driving

drinking, went in for a swim, and ended up drowning. A real tragedy for his family, friends, coworkers, and the Air Force. But in this case he made two decisions — to drink and then to swim. That combination resulted in his death. Taken individually, neither would have been fatal, but acting in concert they resulted in his death.

Unfortunately, *he* made these decisions. He could have enjoyed his drinking and foregone the swimming, or he could have *decided* not to drink because he wanted to go swimming. He wanted to do both.

Another example, another tragedy. A life support troop at a Midwestern base was conducting water survival training with the rest of his shop at a local lake. After a large lunch and in the process of securing their equipment out on the lake, this individual decided to jump in the water in his uniform and without a personal flotation device. His colleagues saw him and thought he was joking

when we're tired and should stop for the night or at least for a rest, we decide to participate in recreational activities without the proper equipment or safety devices, we decide to ride motorcycles or bicycles without helmets, we decide to drive 80 miles per hour when the speed limit is 65. Unfortunately, many times our decisions directly lead to an accident.

What's the solution? I believe it can be summed up in one word —THINK! Now a more formal way to put this is to encourage you to do your own personal operational risk management assessment of what you're about to do. And that is exactly what it is. Ask yourself, "Is what I'm about to do really worth the possible consequences?"

Also, consider the potential for harm to yourself or those you're with (i.e., spouse, children and friends), and consider how an accident would affect your loved ones, even if they were not with you and directly involved. Who wants to leave them behind? I know I don't. ■

# R CHOICE



# When 5 M

*VAQ-134, Electronic Attack Squadron, U.S. Navy  
Cannon AFB, N.M.*

**About the Author:** *U.S. Air Force Capt. Chris Pirkel is a former EF-111 weapon system officer (WSO) now serving as an electronic countermeasures officer (ECMO) in VAQ-134, a U.S. Navy Expeditionary EA-6B squadron.*

DoD Photo by SrA Greg L. Davis

**T**he sortie was uninteresting until we returned to the pattern. It was a beautiful visual flight rules (VFR) day — the sun was shining and the winds, which are frequently strong at Cannon, were light. Both runways were open and we began to knock out a few simulated emergency approaches when the unexpected happened — an F-111F blew a tire on landing, scattering rubber debris through the intersection of the airfield's two runways and temporarily closing them both.

Nothing to worry about. We still had 4,000 pounds of fuel — about 800 above what is required to reach our closest divert base, the former Reese AFB, Texas. We contacted the supervisor of flying (SOF) in the tower and told him our fuel state so he could relay the problem to air traffic control (ATC). He told us that he expected to have a runway open in about 15 minutes. We decided not to divert yet, as we expected to still have 3,200 pounds of fuel

when the runway was to reopen. We stayed in the radar pattern, waiting to hear an update on the field status, burning gas.

We contacted the SOF again at the Estimated Time In Commission (ETIC) he gave us for field reopening, but still no good news. Debris removal was taking a little longer than expected — it would be another five minutes. Considering our jet, we decided that we'd be better off hanging out in the pattern at Cannon for a few extra minutes than diverting. So we waited. We contacted the SOF again after the prescribed five minutes — still not open. We advised the SOF that we were now below Reese divert fuel level. We continued to hold with radar approach as the final remnants of the blown tire were cleaned up.

# Minutes Become an Eternity



At this point we were committed to Cannon no matter how long debris cleanup took. The five-minute delay turned into 20 before the field was finally open — a full 35 minutes after the tire was blown. At this point we were at 1,700 pounds of fuel and 20 miles outbound with approach control. We finally turned inbound for a normal landing and touched down with around 1,400 pounds left — somewhere around 15 minutes of usable fuel.

We never should have stayed at Cannon with a promise that the field would be opening soon. When we hit the necessary

3,200 pounds of fuel to divert, the runways were still closed. End of story. That should have been all the information required to make the correct decision.

No one ever wants to take a jet away from the “home drome.” Fueling problems, start carts and crew duty day restrictions are just a few of the problems that can result from diverting, but these are all insignificant reasons compared to the possibility of “giving one back to the taxpayers” because of fuel starvation. It’s a simple lesson, and one that has probably been learned the hard way many more times than necessary — **WHEN YOU HIT YOUR DIVERT FUEL LEVEL — DIVERT!** ■



# THUMBS UP FOR



*Tech. Sgt. Donald E. Felch  
Air National Guard  
115th Aircraft Generation Squadron  
Madison, Wis.*


**“H**elp!” The young airman’s pain was apparent as he called across the hangar floor. “Help! I’m stuck.” As the second weapons load crewmember, it had been his job to prepare the GBU-12 (500-pound laser-guided bomb) for downloading. The airman had carefully cut the lanyard holding the folding fin release latch in place, as he had been instructed to do by

the load standardization crew earlier that day. What he had forgotten to do was to replace the safety pin through the fin release latch prior to cutting the lanyard. Now, with his thumb firmly held by the latch, and injured severely, he called for the help of his crew.

When we think of weapons safety, we often imagine the detonation or the inadvertent drop or collision of explosives. This airman’s plight serves as a reminder that working with or around weapons is a dangerous job that requires careful adherence to established procedures. Most weapons career fields are accustomed to operations



# WEAPONS SAFETY



requiring a team or crew approach, and technical data is not always within immediate reach of the person performing a task.

This young airman's weapons load crew chief was on the other side of the aircraft attending to a different task. Although safety pin installation was part of the procedure, neither the crew chief, who was performing his own work, nor the airman recognized that the step was not completed. The crew was certified to download the bomb, and they were authorized to perform several tasks simultaneously as

part of the load. So, if the crew was working together within the guidelines of their training, what went wrong?

Two things went wrong with this operation. First, the injured airman jumped into his job without first thinking through the steps he would take. Second, the loading standardization crew and the airman's crew chief failed to remain observant after initial certification. Every member of our total Air Force team is responsible for his or her own actions. When working with weapons, it is especially important to take our time and concentrate on the job at hand. Even if we are performing a familiar task, a little pause

to gather our thoughts could prevent a serious accident.

As leaders, we need to be aware of the experience level of our people and remind them to take a moment to think through a job completely. Part of risk management is eliminating the risks we can control. One great way to do that is to eliminate complacency.

Even after thinking through a task, if our people have not performed that task often enough, they may forget something. In a scripted operation like a weapons load or download, each crewmember has his or her task to perform at any given time. You may not be able to constantly watch everyone you are responsible for. If you find yourself unable to provide adequate supervision, ask for help. In the case of this injury, the weapons load crew chief could have requested that one of the standardization crew members remain on the load spot to supervise the download. Although not required for a certified load crew, the "extra set of eyes" could have prevented an injury.

The prevention of accidental injuries, damage and death should be the goal of everyone in weapons safety. In fact, it should be the goal of everyone in the Air Force, Air National Guard, and Air Force Reserve. By taking that extra moment to collect our thoughts, and by careful supervision of people with limited experience, we are taking positive steps to prevent mishaps. We should also remember that in the weapons community, there are other hazards that do not involve dropping or detonating ordnance.

As leaders in today's air and space forces, we should never need to hear, "Help!" yelled across a hangar floor, and if we do our part in advance, maybe we never will. ■

# Fleagle

TIME FOR  
A BIT OF FALL FIX-UP AROUND  
TH' OLD HOME PLACE.



THIS BROKEN SHUTTER  
LOOKS LIKE TH' PLACE TO START.



TH' SUCKER WON'T  
COME OFF.



**RIP!  
SNAP!  
BREAK!  
FALL!!**



PEDO, THINK MAYBE THERE'S  
A REASON FLEAGLE'S  
WEARING THAT SHUTTER?














I DARE NOT  
ASK.



# Weapons Safety Stats

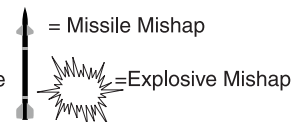
## ACC Losses for FY 99

(1 Oct 98 - 1 Sep 99)

Number of Weapons Mishaps / Dollar Losses			
	Class A	Class B	Class C
8 AF	None	None	1/\$185K 
9 AF*	None	None	1/\$20K 
12 AF	None	None	2/\$28K  
AWFC	1/10M 	5/\$2.9M    	2/\$81K  
TOTAL	1/10M	5/\$2.9M	6/\$314K

**Weapons Fatalities - None**  
**Nuclear Mishaps - None**

\* Includes all Class C mishaps in CENTAF AOR  
 \*\* Cost of most recent mishap(s) not yet available



Class A - Fatality; Permanent Total Disability; Property Damage \$1,000,000 or more  
 Class B - Permanent Partial Disability; Property Damage between \$200,000 and \$1,000,000  
 Class C - Lost Workday; Property Damage between \$10,000 and \$200,000

# Recipe for Dis

**A**s the sun sets on a normal day, our aircraft parking ramp becomes a maze. The area is usually poorly illuminated and cluttered with vehicles and equipment to repair the aircraft that were flown that day, as well as preparing the rest of the aircraft for flying the next day. To make this maze even more of an obstacle course, add a little rain, mix in some fog and, most

importantly, spice it up with a lack of all-weather protective gear. When the weather changes for the worse, the way we perform our jobs can change as well, and you can almost see a disaster waiting to happen.

Well it was very late at night,

or very early in the morning, depending on how you see swing shift. Regardless, it was still dark and difficult to see. The aerospace ground equipment (AGE) driver assigned to our area had a lot on his plate be-

cause the flight line personnel were wrapping up a busy night of maintenance, and to complicate matters more, the weather changed for the worse rather quickly. The fog moved in, visibility was drastically reduced, the rain started pouring down, and the driver didn't have his rain gear because the night was clear when he started work seven hours earlier.

To top things off, he had just received word from his boss that his replacement wasn't coming in because he was placed on quarters, and now he was going to have to work late. The driver had big plans for after work, and this inconvenience caused some frustration. The workload seemed to be growing, and he began to feel overwhelmed with too much to accomplish alone. He was being hit with radio calls left and right.

The AGE driver's intentions were in the right place, but he started rushing around without a plan of attack. He was a bit frustrated about the

sudden turn of events and started driving a little too fast for the conditions. He was trying to write down everything he had to do, but while doing so he missed some of the radio transmissions.

He pulled up to Delta 37, an aircraft parking spot that looked deserted. He didn't see anyone working on the aircraft and thought he heard that the crew was done with the generator. He stopped, jumped out into the rain, ran back to the generator, hooked it up to his tug, ran back to the cab, and drove off. As he was driving away he felt a small jerk, but thought nothing of it because the

**The fog moved in, visibility was drastically reduced, the rain started pouring down, and the driver didn't have his rain gear because the night was clear when he started work seven hours earlier.**



# aster

*Chief Master Sgt. (S) Michael J. Mlodzik  
372nd Training Squadron, Det. 15  
Kadena AB, Japan*

tug drove like a tank anyway.

He was on his way to the servicing yard when he received a radio call that they weren't finished with the generator at Delta 37. The AGE driver responded that he was starting the nightly servicing and he would return it when he was finished. That wasn't the answer the expediter wanted, but he knew where to find another generator and decided to go get it. The expediter hooked up the new generator to his truck and drove off. He dropped it off with his specialists waiting at Delta 37, and they unhooked it, pushed it into position, and unraveled the power cord.

When they tried to hook the generator up to the aircraft, they realized they couldn't plug it in. It was dark, foggy, and raining, so they got out a flashlight to

dent arrived at the AGE driver's location his suspicions were confirmed; the AGE driver never disconnected the generator from the aircraft. The cord was dragging behind the generator, which was behind the AGE tug, and part of the receptacle was still in the power cord. The production superintendent directed a foreign object damage (FOD) walk in the rain to find all the pieces. The rain-soaked mechanics were none too happy, and maintenance just doubled to make everyone's night unexpectedly longer. The AGE driver admitted to not doing a walk-around inspection prior to hooking the generator up because he had assumed the flight line personnel did the tow preparations when they were finished with it. Well, the flight line workers were not finished with the generator, and the AGE driver grabbed what he could with-

double-check, and lo and behold, just as they had suspected, there was no receptacle. They called the specialist expediter over to show him. The flight line expediter then called the production superintendent to come over. The whole time no one said anything about the situation over the radio.

When the production superintendent found out what was going on, his temper flared and he authoritatively called the AGE driver to the spot. The AGE driver replied that he would be there after he serviced another generator. At this time the driver did not know what was going on and was directed to stop his vehicle and wait where he was until the production superintendent arrived.

Sure enough, once the production superinten-

out really thinking about doing the job like he was trained.

Environmental conditions can have a big effect on the way we do our jobs. We need to remember that, regardless of what the weather is like or of the mental anguish we may be in, we are all relied upon to do our jobs the right way every time. There is no room for error. Luckily no one got hurt in this situation, but we must always remember to apply common sense and not rely on others to always do their jobs. Take the extra couple of seconds to follow-up and make sure you are doing your part in preventing mishaps by being prepared, staying focused, thinking clearly, and avoiding situations that create doubt and increase workloads. ■



# MONTHLY AWARDS



## GROUND SAFETY AWARD OF DISTINCTION

Staff Sgt. Richard D. Fisher  
27th Component Repair Squadron  
Cannon AFB, N.M.

SSgt. Fisher discovered a hidden maintenance error in an F-16D ejection seat, thus averting a potential loss of life and injuries. The ejection seat on subject aircraft was removed to facilitate the troubleshooting of the defective aircraft intercom. The seat was subsequently sent to the Egress Shop for storage. During the prestorage inspection, Sgt. Fisher discovered the Recovery Parachute Assembly on the ejection seat was not properly installed, even though the original inspection checklists did not call for such a check. Immediately upon the discovery of this anomaly, the 428th Fighter Squadron initiated a one-time inspection and discovered two more seats having a similar deficiency. Consequently, the aircraft in Singapore were also inspected before the next flight, and two seats were found with this problem. Sgt. Fisher's attention to detail and professionalism is indeed highly commendable.



## FLIGHT LINE SAFETY AWARD OF DISTINCTION

Senior Airman Curtis L. Bourland  
389th Fighter Squadron  
Mountain Home AFB, Idaho

TSgt. Anthony Zito and a two-man ground crew that included SrA Bourland were performing a post-phase engine run on an F-16 aircraft. The first engine start failed and a second attempt was initiated. During the second attempt, all hydraulic system pressure was lost and the Jet Fuel Starter intake and exhaust doors remained open. Amn. Bourland noticed a fire had started inside the JFS intake and exhaust ducts. Realizing that there was no system pressure available to close the doors and thus smother the fire, Amn. Bourland took matters into his own hands. Without hesitation, he quickly found a fire extinguisher and put out the blaze. The use of the fire extinguisher dictated the removal and replacement of the faulty Jet Fuel Starter, but the damage could have been much worse. The fire not only had the potential to destroy the aircraft engine, but could have resulted in the loss of the aircraft as well, which would have cost the Air Force nearly \$30 million. His quick thinking and situational awareness contained the fire within the Jet Fuel Starter and prevented further damage to the aircraft as well as possible injury to personnel or loss of life.





## **CREW CHIEF SAFETY AWARD OF DISTINCTION**

Senior Airman Matthew A. Wood  
58th Fighter Squadron  
Eglin AFB, Fla.

During an incentive ride in an F-15D, SrA Wood proved his devotion to duty and exceptional situational awareness when the pilot was unable to slow the aircraft during a final approach. The pilot conducted several checks, but was unable to determine the cause of the malfunction. Unable to slow the aircraft down to a safe landing speed, the pilot executed a go-around. The pilot completed checklist procedures, yet could not isolate any causes. Amn. Wood immediately began a survey of the rear cockpit in an effort to assist in determining the cause of the malfunction. His investigation revealed the Integrated Communication Control Panel had become loose and had dislodged from its compartment and was wedged against the rear throttles preventing the pilot from reducing the power below the 80 percent. He immediately informed the pilot of his discovery and asked him to advance the throttles momentarily. He then freed the panel, reinstalled it in its proper place and held it in position, allowing the pilot full use of the throttles. Amn. Wood's quick thinking, situational awareness, and attention to detail averted a certain loss of a valuable combat resource and possible loss of lives.



## **WEAPONS SAFETY AWARD OF DISTINCTION**

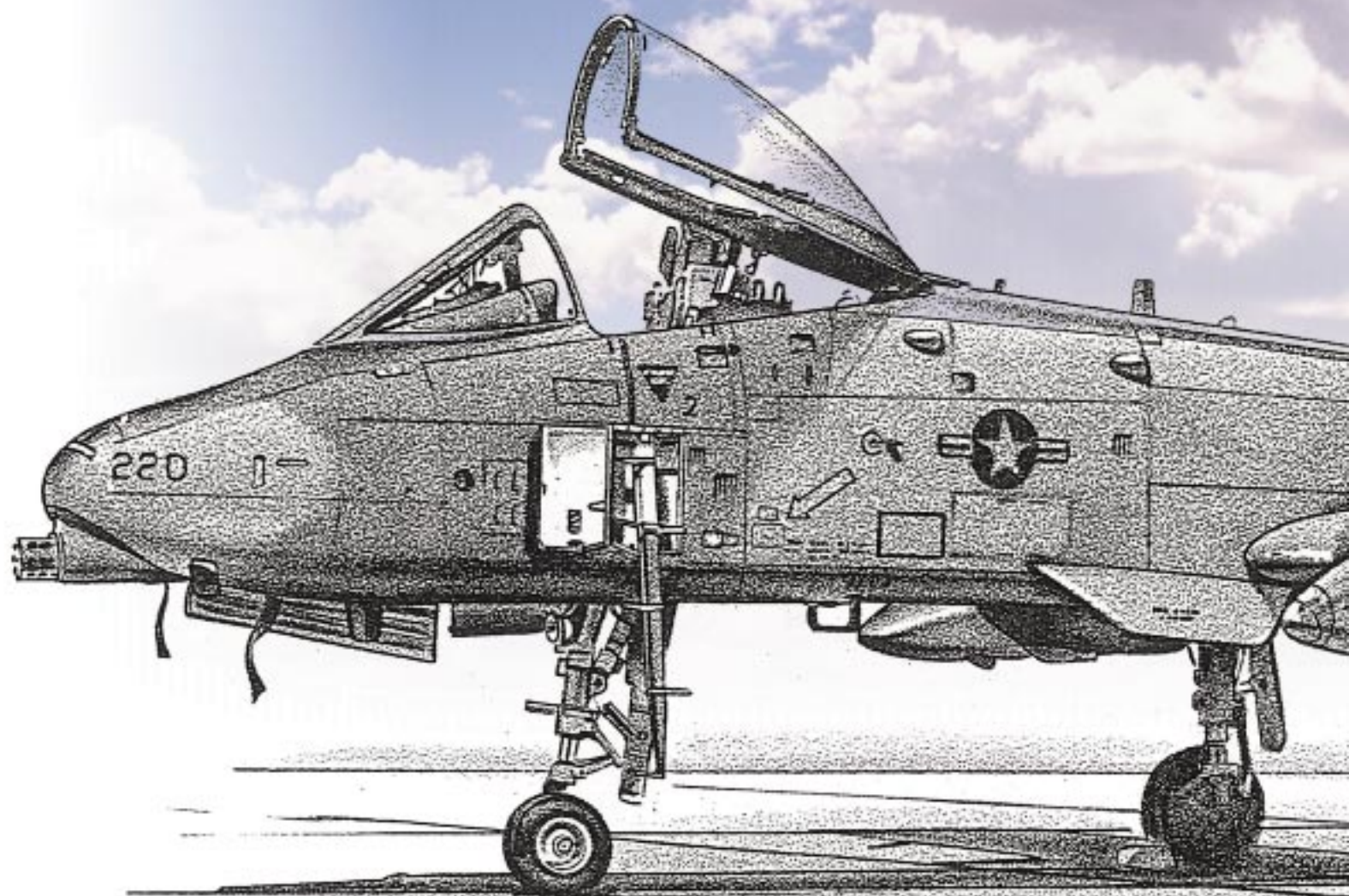
Senior Airman Frank J. Miller  
366th Equipment Maintenance Squadron  
Mountain Home AFB, Idaho

SrA. Miller distinguished himself as an outstanding Munitions Handling Crew Member while encountering a potential major problem. Amn. Miller was assigned the task of delivering a module loaded with explosive hazard Class 1.3 countermeasure chaff/flare and white phosphorous training munitions to the 391st Flying Squadron. While traveling down the explosive route, his trailer began to sway erratically and swerved into the oncoming traffic lane. Immediately, Amn. Miller reduced speed and regained control of the trailer, quickly bringing it to a stop. Amn. Miller discovered, upon further assessment, that the hinge pin holding the front sway braces together had fallen out of the socket, creating the erratic behavior. He contacted Munitions Control, inspected the remainder of the load for any damage, maintained traffic control, and stood by for further assistance. His quick and levelheaded thinking averted a possible munition mishap and allowed the items to be cross-loaded onto a new trailer and delivered to the ramp in time to meet the next launch. Further investigation into this problem resulted in submission of an AFTO Form 22 to change technical data and crosstell message sent out to all affected agencies.

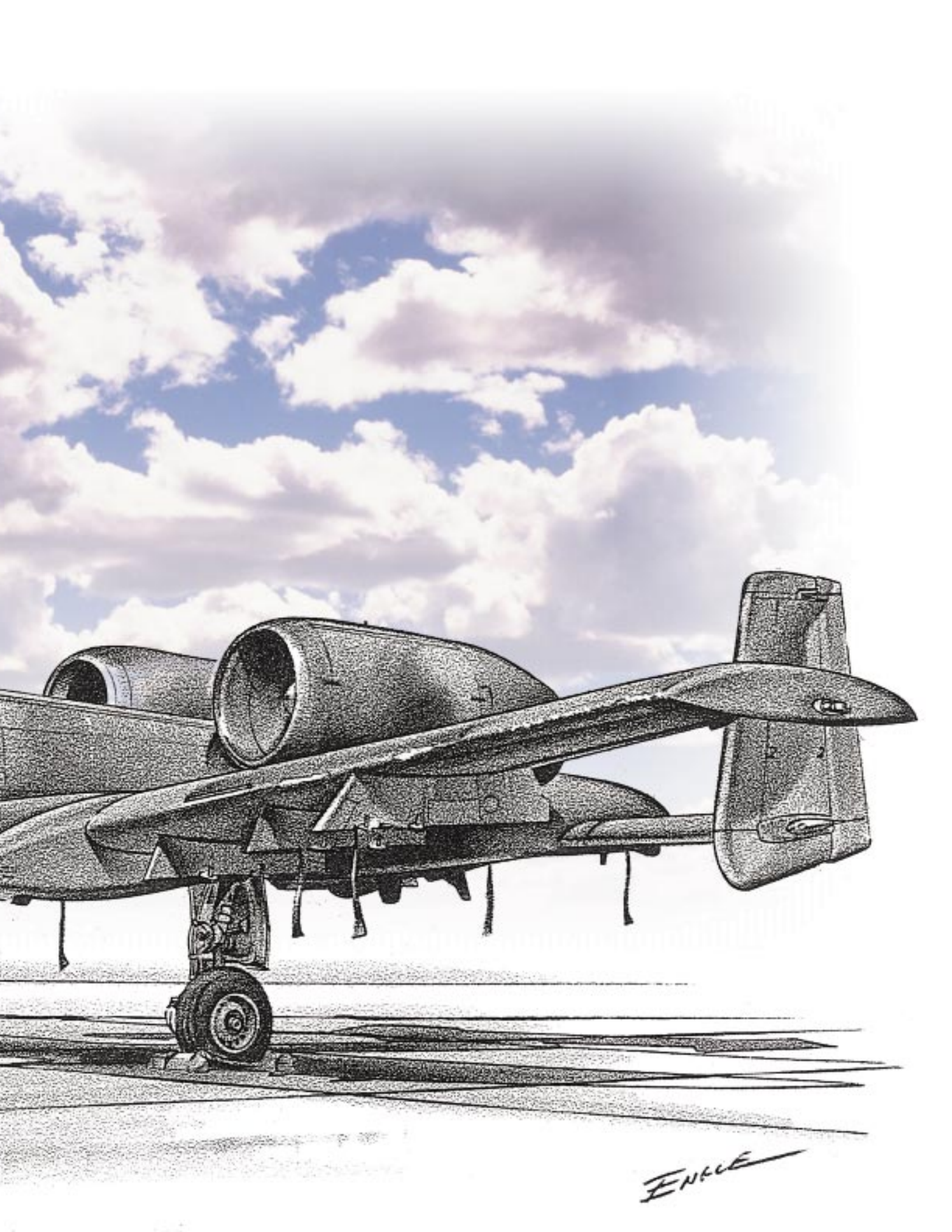


# A-10

## Thunderbolt II







# Hearing Conse



Think of the hair cells as grass; step on the grass once and the blades will spring back, but continual walking on the grass flattens the blades until the grass is dead.

*Triple Flange personally fitted ear plugs*

## Noise-Induced Hearing Loss

Do you love the sound of jets as they roar overhead, or going to see your favorite band and standing right in front of the speakers? Well these pastimes can cause permanent problems.

Loud noise is the leading cause of hearing loss in the United States. However, noise-induced hearing loss is preventable by wearing proper hearing protection.

As noise levels increase, the amount of time you can be exposed without being harmed decreases. Other factors that impair the hearing are age, ear trouble, and time and distance from the source of sound. Hearing effects are cumulative; the more noise your ears are exposed to (on and off the job), the more hearing you may lose.

Noise-induced hearing loss occurs when the delicate hair cells in the inner ear are damaged (i.e., think of the hair cells as grass; step on the grass once and the blades will spring back, but continual walking on the grass flattens the blades until the grass is dead). Hearing loss progresses very slowly and is not obvious at

first. The problem is that, by the time you're aware of the hearing loss, the hair cells are permanently damaged.

Hearing loss due to noise exposure is permanent and cannot be corrected by surgery or medication. Hearing aids just amplify sounds that are distorted without the hearing device; they don't necessarily reduce the distortion. To determine if hearing protection is required, a good guide to follow is the Three Foot Rule. It is a method of identifying whether noise levels are loud enough to cause harm. You can be certain you are in a hazardous noise environment if you have to shout at a distance of three feet (arm's length) or if you have to raise your voice at one foot to be understood. You should always use earmuffs or properly fitted earplugs to reduce the noise getting into your inner ear. If you are exposed to a hazardous noise area at work, your supervisor is required to provide you with form-fitted earplugs, adjustable earmuffs, or foam earplugs. Fitted earplugs can be obtained from the occupational medicine section within your base's public



# ervation

*Staff Sgt. (S) AnnaBelle White  
1st Aerospace Medicine Squadron  
Langley AFB, Va.*

health office at no cost to you or your shop, and replacements can be obtained anytime during normal duty hours. You don't need an appointment or audiogram to receive fitted earplugs.

### About Hearing Protection

Proper use of hearing protection can prevent hearing loss. Be aware of potential hazards and simply avoid being exposed to unnecessary loud noise. However, when exposure is unavoidable, use earplugs or earmuffs to protect your ears from most common noise sources. An exception is for personnel working immediately adjacent to aircraft while on high power settings; in this case, earplugs and earmuffs should both be worn.

Earplugs should be worn whenever exposed to hazardous noise, both on and off duty. If earplugs are worn daily, they should be washed daily. Wash in warm soapy water, rinse and air dry. Do not use rubbing (isopropyl) alcohol for cleaning. Remember, if you lose your earplugs, just drop by the public health office anytime and get more.

### Types of Earplugs

Triple Flange and V51R personally fitted earplugs have two advantages over the E-A-R single-use foam earplugs. The benefits of personally fitted earplugs are that they are good for use up to six months, and they are inserted more quickly and easily than E-A-Rs. To insert E-A-R plugs, you must roll them in between your fingers

until they are the thickness of a pencil. They are then inserted into the ear and held until the plugs expand (usually 1-2 minutes in warm weather and 2-4 minutes in cold weather).

The directions are also on the E-A-R container. To properly place the V51R earplug, simply insert the plug into the ear and rotate the tab to the rear. To properly place the

Triple Flange plug, insert the plug so that the largest flange touches the outer rim of the ear canal.

In all cases, when inserting earplugs, you should straighten the ear canal by lightly tugging the ear up and back. Also, in order to preclude unnecessary buildup of bacteria, do not moisten the earplugs with your saliva

before placing them in your ears. Moreover, you should wear only approved earplugs or earmuffs (contact Public Health or Bioenvironmental Engineering to find out if the plugs or muffs used in your shop are approved at your base).



*V51R personally fitted ear plugs*

Sound is measured in decibels (dBA).  
For example:

Whisper — 30 dBA  
Conversation — 60 dBA  
Average Background — 80 to 90 dBA  
Power Tools — 100 dBA  
Jet Engines — 130 to 140 dBA

Levels greater than 85 dBA are considered hazardously loud.

### Hearing Conservation Program Requirements

Air Force medical personnel are aware of hearing loss problems. As a result, there is a continuous and comprehensive program to reduce

personnel noise hazards throughout the Air Force; this program is called the Hearing Conservation Program and includes:

1. Periodic hearing tests to detect hearing loss before it becomes permanent.

*E-A-R Single-use foam earplugs*



2. Educational briefings and distribution of information letters or pamphlets to acquaint personnel with the hazards of noise.

3. Design of less noisy ground equipment and aircraft.

4. Design of enclosures to attenuate noise from equipment that cannot be internally modified.

5. Issue of earplugs, earmuffs and other specialized protective equipment to personnel when noise attenuation is either economically or technically not feasible.

All Air Force members are required to follow the guidance set forth by the Hearing Conservation Program. In fact, failure to comply with current standards could result in disciplinary action against an offender and supervisor under the new Air Force Occupational Safety and Health (AFOSH) Standard 161.17 "Standardized Occupational Health Program."

Remember, hearing loss from exposure to loud sounds is permanent and irreversible. It is preventable when you wear hearing protection. You are the only person who can care for and be responsible for your hearing. Don't let yourself down! Finally, if you ever have any questions concerning noise or occupational health, please contact the Public Health office at your base. That's why we're here — to be a help and service to you. ■

*Staff Sgt. (S) AnnaBelle White demonstrates the correct way to insert E-A-R plugs.*

To insert E-A-R plugs, you must roll them in between your fingers until they are the thickness of a pencil. They are then inserted into the ear and held until the plugs expand (usually 1-2 minutes in warm weather and 2-4 minutes in cold weather).



## Some Common Questions About Noise

**Question** - How much noise is hazardous?

**Answer** - You can develop hearing loss if you are exposed to 85 dBA for 8 hours per day.

**Question** - Are all kinds of noise equally hazardous?

**Answer** - No. The most hazardous is pure tone noise in which you can distinguish a single tone. The next is broad band noise, where you cannot distinguish one particular tone.

**Question** - Is off-duty noise hazardous?

**Answer** - Yes. For instance, a rock concert, model aircraft flying, weapons firing, motorcycling, or even mowing the lawn can be harmful to your hearing. Remember, the more noise you add, the more hearing you subtract.

**Question** - How can I protect myself?

**Answer** - Be aware of your surroundings, and avoid being exposed. When exposure is unavoidable, wear proper hearing protection.

**Question** - Are there any symptoms of overexposure?

**Answer** - Yes. You will most likely experience a "ringing" in your ears. This is due to trauma to the ears. This is normally temporary, but repeated exposure can make this permanent.

## Some Misconceptions about Noise

**1. Noise-induced hearing loss can be cured.**

**True or False?**

- False. Once hearing loss due to noise has become permanent, there is no surgery or medication that can help recover one's hearing.

**2. Use of earplugs while working creates a safety hazard. True or False?**

- False. It is more of a safety hazard to work without them. Earplugs and earmuffs reduce the high frequency noise that damages your hearing. They do not interfere with those frequencies involved in speech.

**3. Single-use E-A-Rs are better than personal fitted earplugs. True or False?**

- False. Both types of earplugs give you adequate protection. However, as mentioned earlier, personally fitted earplugs are quicker and easier to insert.

**4. I can borrow my buddy's earplugs when I need them. True or False?**

- False. This is not a hygienic practice. Also, personally fitted earplugs come in various sizes and are custom-made to fit each individual. Public Health personnel provide proper fitting.





# Birds of Prey

*1st Lt. Erin Bradley  
Editor, The Combat Edge  
Langley AFB, Va.*

**O**n Sept. 22, 1995, an E-3B AWACS crashed less than one mile from the end of the runway at Elmendorf Air Force Base, Alaska, after an unknown number of Canada geese were ingested into the No. 1 and No. 2 engines — all 24 people on board were killed.

Though this was probably the most tragic bird strike in Air Force history, it is only one of many instances of bird strikes that happen each year. To combat the Bird Aircraft Strike Hazard (BASH), flight safety personnel, airfield managers, biologists, and civil engineers have worked together over the years to develop lethal and nonlethal methods of control. BASH team members have the difficult task of balancing protecting endangered bird species on bases with protecting crewmembers' lives and aircraft. This

balancing act has resulted in some of the following nonlethal methods of hazard control:

- **Noise:** Horn blasts and broadcasting bird distress calls are used to make typical nesting areas less attractive to the birds. Some bases also use the BASH cannon, a propane-powered air cannon and a bio-acoustic sound system that simulates different noises designed to annoy and frighten away birds.

- **Chemical:** For example, geese hate the taste of grapes. Spraying grape extract on the grass and foliage where they roam may convince them to settle elsewhere.

- **Barriers:** Just like aircraft, birds need a certain amount of space to take off and land. Stringing nets or cords across golf courses, ponds and other natural nesting areas may dissuade them from being around there.

- **Border Collies:** A popular strategy with animal-rights activists, this involves employing the Collies' natural herding instincts to disperse birds and discourage their return. A limitation of Collies is that there is no way of knowing that the dogs won't just chase the birds from one side of base to the other or won't scare the birds

ing pooled water reduces habitats attractive to birds.

- **Falcons:** Though historically trained to hunt and capture wild game animals, falcons can be used in a controlled manner as part of a comprehensive program to harass nuisance birds on an airport and reduce the attractiveness of the airfield to the birds.

Periodically, some bases have exhausted these and other nonlethal methods to no avail and have had to resort to lethal measures.

"Considering the frequency of aircraft bird strikes, we must take active measures to decrease the populations of migratory birds that have made their homes directly in our flight path," said an ACC spokesperson. "Nonlethal

means are preferred, and we continue to use nonlethal means to try to control bird populations, but pilot safety is first. We can't, and shouldn't have to, wait until people are killed before we are justified in taking action."

Mid-air collisions between aircraft and birds have been a problem for years because of the high operating speeds of jet aircraft at low altitudes. Research and development on which materials and shapes provide the best defense against injury from bird strikes are done using



Howell E. Lewis, 51st Fighter Wing bird controller, Osan Air Base, Republic of Korea, "plugs" his ears while Master Sgt. Gary Wilson, 51st Operations Support Squadron, operates the new BASH cannon used to deter birds from the flight line. Photo by Senior Airman Catherine S. White, 51st Communications Squadron.

directly into the path of an aircraft. Additionally, each dog requires intensive training and its own handler, which is expensive, and the method would probably require a large number of dogs working long hours to effectively patrol the whole base.

- **Controlled Fires:** Airfield managers can use "properly applied fire" to change the habitat of a BASH species so it is no longer attractive to that species, if the habitat is in an area that poses an aircraft threat.

- **Landscaping:** Landscaping near the runway can be developed to be unattractive to BASH species, while landscaping at more remote sites can be developed to act as magnets, attracting birds away from the runway area. For example, controlling grass height and eliminat-

what is euphemistically referred to as the "chicken gun" at Arnold Engineering Development Center in Tennessee. Canopies and helmets using various shapes and materials are designed and tested for safety and durability at the Bird Impact Range by firing a chicken carcass at the cockpit at different speeds and angles. The tests help engineers develop transparent materials that, although lightweight and optically suitable, will withstand high impact forces without breaking, shattering or flexing excessively.

BASH program monitors at each base research which species are creating the local bird hazards, and where, when and under what conditions the hazards are occurring. One way to determine these conditions is by studying the



birds' migratory and nesting patterns, and finding out what makes a particular area of the base more attractive to them. This information can be used to predict the best ways to eliminate the bird hazard and the best ways for pilots to successfully avoid the birds.

Using historical data, the Air Force Safety Center's Bird Avoidance Model (BAM) identifies the window when and where bird activity will most likely occur. It is a useful tool for longer term forecasting that can be useful to flight schedulers, but it cannot pinpoint the specific days activity will take place. In order to avoid four or five extremely hazardous days during the migratory season, therefore, units may close their low-fly airspace for the entire migratory window. This leaves units with a difficult choice — to either accept the risk of a bird strike or suffer a significant degradation of their mission.

To complement the BAM, the Avian Hazard Advisory System (AHAS) is being developed by Air Combat Command. AHAS uses Next Generation Weather Radar, commonly referred to as NEXRAD, to detect when massive flocks of birds will be in low-level training airspace so that aircrews can be advised. There are nearly 150 individual NEXRAD sites in the United States, which are networked so the data can be collected, interpreted and disseminated by a small group of experts. Using BAM information of migratory times and routes, AHAS monitors can discern which NEXRAD sites are best to use to monitor and detect bird movements. Since bird migration is also directly related to weather patterns, NEXRAD forecasts can be used to predict when migration is likely to take place. Combining the information about where the birds are in their migration, how long they've been nesting, and weather forecasts is the key to using AHAS for getting timely information to aircrews. This system will be phased-in by geographic sections of the continental United States (CONUS) over the next two years.

Though AHAS is unlikely to be a unilaterally

effective, nonlethal means of alleviating the bird aircraft strike hazard, the key to mitigating the bird strike risk is a combination of strategies, beginning with persistence and teamwork between base agencies. Civil engineers, safety personnel, biologists, pilots, maintainers, and people in all career fields must continue to try all means possible to prevent the further loss of life and valuable aircraft due to bird strikes. The hazard of bird strikes is real — losing 24 Air Force lives at one time is proof enough of that. As military members, we should never assume that someone else has total responsibility for our BASH programs. We must remain active and vigilant, for if we sit by watching, we may watch as our fellow service members go down. ■



Bolero, a 9-year-old border collie, demonstrates her skill at waterfowl management on the Langley AFB golf course Aug. 19. Photo by Tech. Sgt Jack Braden, 1st Communications Squadron.

## **FY 98/99 bird strikes:**

**ACC-wide:** 790 for total of \$7,027,693

**Air Force-wide:** 4,625 for total of \$36,221,580

## **Bird strikes since 1985:**

**ACC-wide:** 13,050 for total of \$288,059,057

**AF-wide:** 39,302 for total of \$508,448,586

# WEAPONS SAFETY AWARD OF THE QUARTER



*Staff Sgt. Christopher S. Schreyer  
49th Test and Evaluation Squadron  
Barksdale AFB, La.*

His energetic personality, positive “can-do” attitude, and a deep sense of pride in job accomplishment characterized Sgt. Schreyer’s daily job performance. He immediately identified the need for and developed an improved squadron explosive safety bulletin board to disseminate crucial explosive safety information to the squadron. His briefings and comprehensive explosives training program prepared squadron personnel on the hazards of explosive handling procedures and enabled them to safely perform duties in weapons operational tests and evaluations. Sgt. Schreyer performed expertly as the unit weapons safety representative to the 2nd Bomb Wing Safety Office, identifying significant deficiencies in Weapon Safety Program elements. He was responsible for clarifying and implementing the policy on use of cellular phones and pagers around electronic magnetic frequency sensitive explosives, in storage, during transportation, and while in proximity of explosive-loaded aircraft. He has sustained an aggressive approach to instilling the habit of pre-task briefings before any explosive tasks are performed. This directly resulted in zero explosive safety mishaps during two AGM-142 launches, three cruise missile launches, and four Joint Direct Attack Munition sorties. He took the lead in establishing a new squadron monthly spot inspection checklist to ensure 100 percent compliance with applicable directives for storing explosives and to provide a safe work environment and necessary training for test personnel working around explosives. He cleared past inspection discrepancies and conducted thorough follow-up inspections to eliminate reoccurrence. During the annual 53rd WG explosive safety inspection, the 49 TES received no discrepancies for weapons safety and was awarded an overall “Excellent” rating as a result of Sgt. Schreyer’s efforts. The safety inspector praised him for exhibiting “an excellent knowledge of weapons safety and a high level of motivation for his additional duty.”



# GROUND SAFETY AWARD OF THE QUARTER

*Tech. Sgt. Ricky M. Stone  
20th Supply Squadron  
Shaw AFB, S.C.*

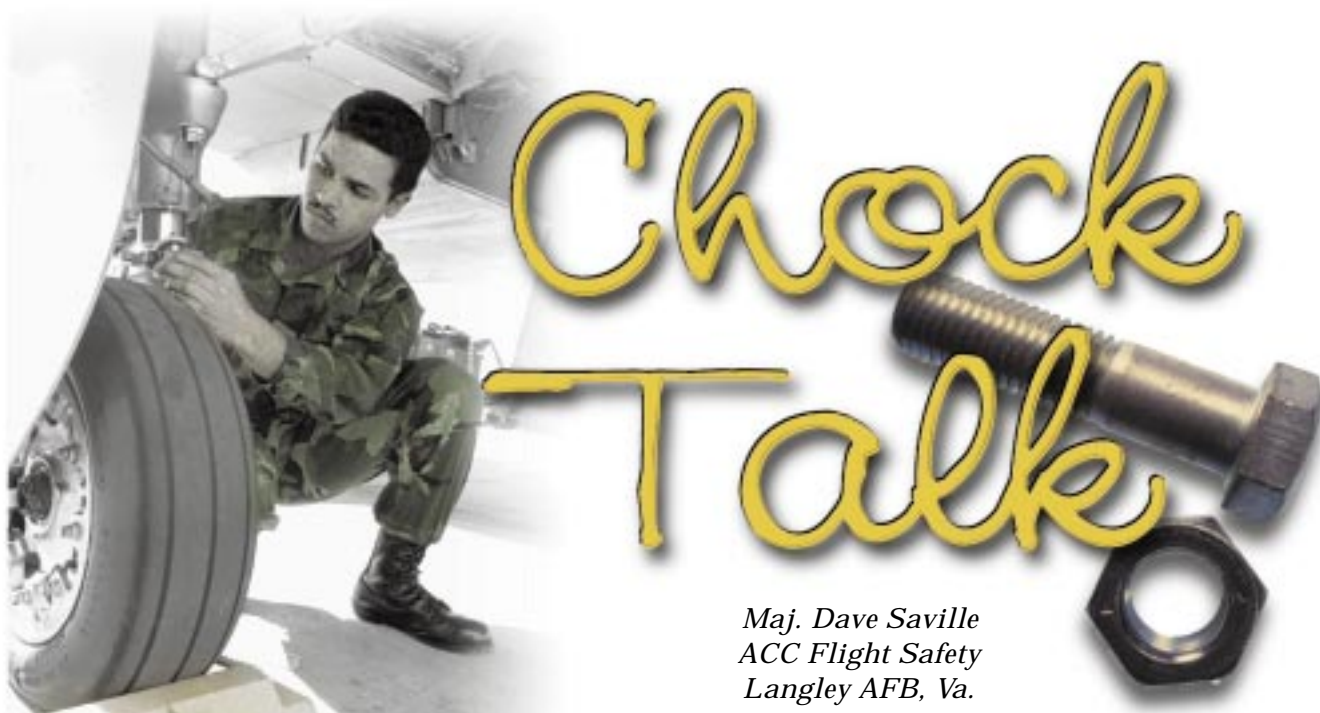


Sgt. Stone has demonstrated sustained superior performance as his flight's Safety Monitor and Alternate Safety Monitor for the 20th Supply Squadron. Operating in one of the most dangerous arenas of fuels operations, Sgt. Stone has implemented unique and effective tools to keep flight members safe and proactive.

As the leader of the flight's safety commission, Sgt. Stone conducts Operational Risk Management (ORM) assessments and reviews on all flight processes. This initiative is a 20th Logistics Group "best practice" and has proved invaluable on several occasions. A perfect example is the elimination of GRU-17E pantographs during hot refueling of F-16 aircraft. Proving minimal associated safety risks compare to its other benefits, this endeavor saves the wing over \$15,000 annually in equipment maintenance and 410 man-hours annually in equipment setup time. Furthermore, he helped develop an ORM matrix which guides members through the decision-making process and helps leaders choose the right course of action on all squadron projects.

Never content with current successes, Sgt. Stone seizes every opportunity. After a February government-owned vehicle (GOV) accident, he acted swiftly to provide better safety while driving R-11 refueling vehicles. Understanding the challenges associated with piloting such a large vehicle through congested areas, he took digital photos of each area where refueling operators drive and inserted them into a comprehensive Power Point slideshow. He gave the informative and thorough briefing to all flight members and it is now included as part of each newcomer's in-processing requirements. An awesome safety management tool, this practice is sure to reduce accident rates and become the benchmark for all Fuels Flights throughout the Air Force.

Sgt. Stone's safety program has earned countless praise and is the rock upon which the squadron's safety program is built. He directs daily safety topic to be briefed at flight roll calls, personally provides weekly safety briefings to the flight, and conducts monthly seatbelt inspections on flight personnel, maintaining a 100 percent compliance rate during his tenure. His program was chosen for a visit during ACC's validation of the 20th Fighter Wing safety program and was a driving force behind the squadron's excellent safety assessment ratings.



*Maj. Dave Saville  
ACC Flight Safety  
Langley AFB, Va.*

*Flight Safety with a Maintenance Slant*

## **The Gold Chit Program**

**T**hough to the average person “clearing your chits” may sound like something a person would have to do after a long night in Las Vegas, it’s an all too familiar term for aircraft maintainers after long, sometimes frustrating shifts.

A “chit” is a small piece of metal with a number engraved on it, like a dog tag, and is used as a type of collateral when signing out tool kits and test equipment for use on the flight line or in the shop. When a maintainer signs out a piece of equipment, a chit is hung in its storage place until the maintainer returns to settle his account, or “clear his chits,” before leaving for the day.

This involves an inspection of the consolidated tool kits and equipment items signed out during the shift, ensuring every item is there and serviceable, and that there is no foreign object damage (FOD) hazard in the box, like pieces of safety wire.

The consequences of failing to account for absolutely every tool and rag used on the flight line or the shop floor could be, and has been,

catastrophic. Jets have crashed and people have been hurt for such breeches in tool accountability discipline. It is a bone-chilling event when an aircraft mishap investigator finds a “wrench in the wreckage.”

Every maintainer knows this. They live it every day. Yet there is that time at the end of the day when they are standing in line to turn in their tools, and the frustration builds. Why does it take so long? Why must everyone suffer because a few repeat offenders continually put a less than perfect tool kit on the counter, launching tool searches that slow the whole line down?

Several innovative ideas have their genesis from standing in that line with those sentiments. One idea that seemed to have particular merit was known as “The Gold Chit Program.” This incentive-based proposal was popular with the troops, and commanders who asked for improvement ideas from the troops were enthusiastic to implement it as well. The trouble, however, was that the idea left huge liabilities in tool control — a tool could be lost and no one would know about it for days.



More than once in my previous units the Gold Chit Program was thoughtfully analyzed and deemed unsafe. Yet every couple of months it would crop up again and have to die another death, attesting to its popularity and resilience. Chances are that this program or a similar one will crop up in your unit, so let me explain some things about how I've seen the Gold Chit Program work.

If a maintainer had no "hits" on his consolidated tool kit during turn-in (a "hit" would be a missing tool, a broken tool not brought to the attention of the tool crib worker, or a FOD hazard found in the box), then his name was added to a special list. If he or she had ten "no hit" events in a row, then they would be issued a silver chit. The owner of a silver chit had the right to walk to the front of the line every day for an immediate tool kit turn-in inspection, with no waiting required. Add ten more "no hit" events in a row, and the individual earned a gold chit. With a gold chit, a person could place his or her tool kit on the counter and leave without waiting for an inspection. The incentive was viewed as twofold: not only did a conscientious worker avoid the wait, he or she also had theoretically earned the trust and confidence of supervision. Furthermore, it was predicted that those standing in line waiting would be highly motivated to earn those same chits, thus improving the unit's overall tool discipline. This idea had some obviously appealing aspects, but operational risk management (ORM) revealed grave flight safety liabilities.

Let me illustrate the liability and bring it into focus. In a perfect world, I suppose technical orders (T.O.s) would not be necessary for those with enough experience. After learning the various maintenance procedures, a maintainer could simply do away with that "nuisance." Only those in training would require constant reference to T.O.s, until they gained enough experience and had it all memorized.

The truth is, of course, we're not in a perfect world, and there are far too many different procedures for any one person to memorize and execute flawlessly without reading the T.O. each time. T.O.s serve as checklists for even the most careful and experienced maintainer, offering sequenced steps,

warnings, and cautions to prevent a mishap from being repeated.

Even command pilots rely heavily on flight checklists to ensure they perform various phases of their mission correctly. There is too much at stake to do otherwise, and experienced flyers will be the first to tell you the value of checklists. Tool accountability is no different. It must be continually enforced to prevent the imminent crash. When the risk is this high, simply trusting a technician based on past performance is as naive as it is dangerous. The best maintainer in your unit still makes an occasional mistake, and is periodically saved by healthy checks and balances built into the system. The Gold Chit Program, as it was proposed, took those checks and balances away, and threatened necessary tool accountability and mishap prevention.

Imagine the following very plausible scenario. A maintainer with a gold chit places his tool kit on the counter and goes home. The guys working in the support section put that kit off to the side. When they finally get through the surge of tool turn-ins and sign-outs associated with shift change and no one is standing in line any more, they turn their attention to the gold chit kit. Upon inspection of that box, they discover a missing apex, scribe, or rag. They immediately call the production superintendent, who informs them that the pilots already stepped to the jets, the jets are cranked, and they're pulling out of the chocks. In hopes that the missing tool is in his pocket, a frantic phone call is made to the gold chit individual, only to find he is not home. The only thing left to do is abort the entire launch. I guarantee the Gold Chit Program would also be aborted at that moment! The Gold Chit Program

**It is a bone-chilling event when an aircraft mishap investigator finds a "wrench in the wreckage."**

creates a potential for a tool accountability crisis with a serious impact to flight safety. An accident would be probable, and likely catastrophic in magnitude.

That very plausible scenario forcefully shows why the Gold Chit Program has died a noble death every time and everywhere it is proposed. Yet the idea has enough attractive merits to keep coming back with vigor. As a supervisor who refused to harbor the inherent risks of the program, I admit I was reluctant to deny the work-weary troops an opportunity to improve the work environment, especially with a grass-roots idea. As we looked closer, however, a derivative of the Gold Chit idea surfaced. It was never implemented due to the closure of our unit, but perhaps you might find some value in it, whether as a benchmark, a basis for comparison to a program your unit uses or is considering using, or simply as a thought-provoking conversation piece around the water cooler. I call it the "Black Chit Program."

While the Black Chit Program is as notional as the Gold Chit Program and employs the same principles, it would get the same positive results without all the inherent risks to flight safety. It is based on the premise that no one should ever have a "hit" once they're in line to turn in their tools. Air Force Instruction 21-101 establishes the requirement to account for all tools, equipment and hardware at the end of each task. Each technician who signs out a tool kit must do a complete inventory at the job site after the maintenance task is completed, BEFORE leaving the job site. If there is a missing tool, the search must begin there at the jet immediately, not after being discovered in line at the tool crib counter.

Here's how a Black Chit Program could work. Every time a maintainer puts a tool kit on the counter and receives a hit, his or her name gets added to a special list (sound familiar?). Say this individual has three hits in a two-week period. He or she would then get a gray chit, obligating them to do something like working behind the counter during shift change for a week of retraining. If that person's hits amass to some other pre-

established upper limit (like five hits in a four-week period), the individual would be identified as a problem and be sent to supervision for documented rehabilitation efforts.

Sound harsh? I don't think so. I believe that the same few people cause the bulk of frustration in the tool turn-in line. Those of you who work behind the counter could probably name them! It's known as the 80/20 rule, which stipulates that approximately 80 percent of the problem is caused by 20 percent of the people. The other 80 percent of the workers are self-disciplined and would have only the occasional hit. That's nothing worth highlighting. I predict that the incentive would again be twofold: not only would the line move faster, but there would also be an increase in the job satisfaction among all your conscientious





maintainers who keep high personal standards as a part of their daily routine. Remember that avoiding a hit at the counter is not luck! It is completely within the individual's control to ensure the tool kit is ready for turn-in.

The parameters of a program like this should be established locally to be appropriate. Each unit would need to customize the parameters, such as the number of hits in a given time period to earn a chit, or counting the number of hits compared to the total number of turn-ins for that person, or the standard consequences of busting the limit. Also, a tracking mechanism would have to be established and carefully maintained in order for it to work. Those support sections utilizing bar code systems might have this capability a mere keystroke away. Clearly,

the first few months of any type of Black Chit Program would be a challenge. After a while, however, the 20 percent of the maintainers causing the majority of the problems would be held accountable, and would likely improve their tool discipline. I see the net gain as inevitable.

I see another benefit from the Black Chit Program. If you have repeat offenders at the tool turn-in counter, isn't it fair to say this is a suspect population for additional tool discipline problems on the job site? Perhaps the motivation they lack to exercise proper tool discipline also exists in their use of technical orders, or in their diligence in aircraft forms documentation. The Black Chit Program could help identify these folks and get them the training and motivation they need. Furthermore, you could expect to see the younger troops getting it right earlier in their indoctrination to fundamentals of "Maintenance 101," thus feeding the good maintenance practices culture of your unit. Your tool discipline culture will improve across the board.

If you are repulsed by the "negative incentive" profile described in this notional Black Chit Program, then I encourage you to submit a program idea you think would be preferable, especially if it's one your unit is currently using and is working well. It's important for us to keep a good cross-flow of information, so even if you disagree with this program, please don't overlook the positive incentive opportunities inherent in any performance tracking system. Your top performers would shine as "zero hits in 50 turn-ins," or something like that. Without a doubt, your commander would issue a pass for a day off and celebrate those folks. You could even call it a "gold chit reward" if you want to!

Obviously, there are many options as to what you call it and how you customize it to work in your unit. The bottom line is that you must never mortgage tool accountability to create incentives for your people to do the job right. This is especially true when incentives can be designed to reach the same goals without losing control of tool accountability. ■



# Fire in the Home

The two  
were  
awakened  
by the smell  
of smoke  
through the  
house, and  
quickly ran  
into the  
kitchen to  
find a huge  
grease fire.

**D**oes your family know what to do if a fire breaks out in your home? Is there some kind of plan that everyone in the family has been made aware of? Many families never think about fire and how to ensure the safety of their family until it is too late.

Here are two stories about fires that broke out in the home. The first story is about a family who made the mistake of never discussing or planning what to do in case of a fire. Because of this lack of knowledge and planning, this family paid a painful price. The second story luckily has a different twist, because this family discussed and planned what to do in case of a fire in their home.

*Staff Sgt. Byron Randolph  
373rd Training Squadron, Det. 15  
Kadena AB, Japan*



The families' names will not be revealed because that is not what's important; the important thing is how planning and basic knowledge of fire issues can make the difference.

Family A had two parents and three young children. The father went to a fire briefing that military families typically receive when they move into base housing. This father paid very little attention to the briefing because he didn't think it was that important, and never passed the knowledge along to the rest of his family — a decision he later regretted.

One day Family A decided to have a birthday party for one of the children. Many people were invited and everyone was having a blast. But when the party ended, tragedy struck.

After everyone had gone home, the father, who had been drinking, asked his wife to cook him something to eat. She fussed at first, telling him how tired she was, but soon gave in to his plea. Though exhausted from all the cooking and cleaning she did in preparation for the party, she went into the kitchen and turned the stove on. She then went back into the living room where the husband had dozed off, and ended up dozing off beside him.

The two were awakened by the smell of smoke through the house, and quickly ran into the kitchen to find a huge grease fire. The somewhat intoxicated father picked the pan up from the stove and tried to throw it out the back door. This was a major mistake. The mother, not knowing what to do, ran into the other part of the house, grabbed her children, and ran out the front door to the neighbors' house to call 911. When the fire department arrived on the scene, the father had suffered burns to his upper body and the kitchen was nearly destroyed. The mother and children, who had escaped earlier, suffered from smoke inhalation.

This was a lesson that was learned the hard way. Things might have turned out differently had the entire family received some knowledge on what to do in case of a fire. Even though the father received the fire safety briefing, he had not paid attention

and his judgement was impaired because he had been drinking. The mother panicked because she had no idea what to do; she could only think about saving her children.

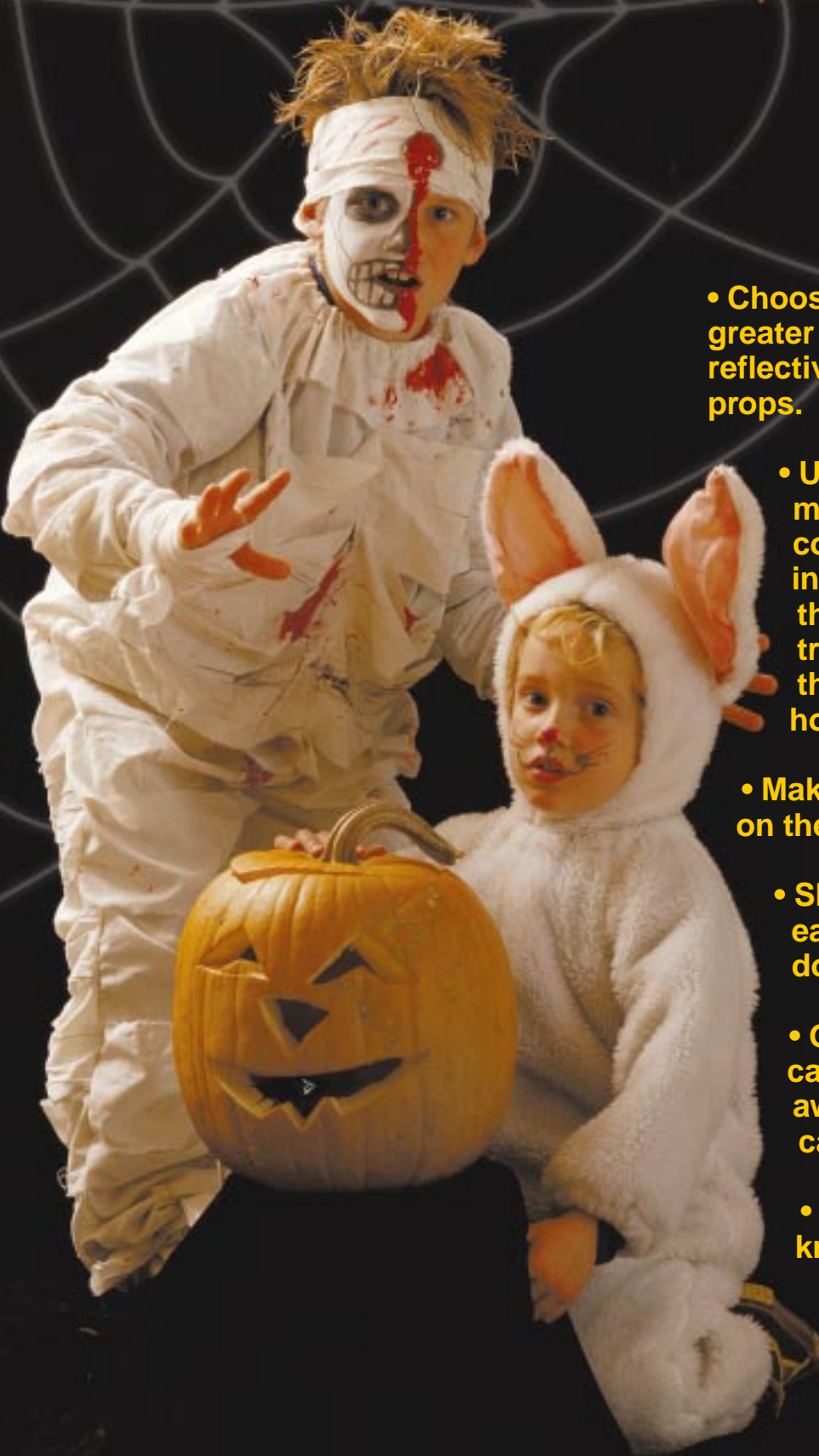
Everyone in this family paid a price because no fire safety planning was done. This family was lucky though — no lives were lost, and material goods can always be replaced.

Family B is a husband and wife and their two dogs. This family planned their traditional get-together with some friends for a nice dinner during the Thanksgiving holiday, but the couple's rush to get the side dishes prepared almost cost them their lives and their property. Having a plan for what to do in case of a fire gave this story a different ending.

The cooking and baking was almost complete — all that was left was the sweet potato casserole with marshmallows. The couple became careless worrying about getting dressed in time for the special dinner, so to make the marshmallows melt quicker on top, the husband decided to turn the oven up to broil, asking his wife to keep an eye on the dish. Preoccupied with getting ready and not really listening to what was being said, the wife forgot she was supposed to watch the dish. When she realized she had forgotten about the casserole, she rushed to the kitchen and opened up the stove to flames. Panicking, she started screaming for her husband to help her. The husband calmed his wife down and ensured her that this was something they had planned for. They put the fire out together by smothering it.

Looking back, I'm sure both families could think of things they could have done differently, but one thing for sure is that Family A will carry greater scars from their experience with fire than will Family B. It is so important to develop a plan of action in case a fire breaks out in your home and to ensure that the entire family is in on this plan. Hopefully these two stories will help you realize just how basic knowledge and planning can make a world of difference in someone's life. Knowledge is power and everyone can benefit — even YOU. ■

# Costume Safety Tips



- Choose light-colored fabrics for greater visibility at night, or put reflective tape on darker outfits and props. Use flame-retardant fabrics.

- Use face paint rather than masks or things that will cover the eyes. If children insist on wearing masks, tell them to wear them only at the treaters' doors and to take them off while walking from house to house.

- Make sure costumes don't drag on the ground.

- Shoes should fit and allow for easy walking (even if they don't go with the costume).

- Give children flashlights to carry and tell them to keep away from open fires and candles.

- Make sure props, such as knives and swords, are plastic and flexible to avoid tripping accidents.